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THE REHOUSE PROJECT

- Filling the gap between reuse as concept and as reality



BUILDING DESIGN FOR SUSTAINABILITY

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The construction industry has a large negative impact on the environment, causing 40% of the world's CO_2 emissions. Today, during times of increased awareness of climate change, there is an increased interest in reuse within the construction industry. However, few know how to implement it in practice and there is not yet a logistics supply system that supports reuse which makes reuse processes complicated, time consuming and expensive on a commercial scale. The aim of this thesis is to contribute to the discussion regarding practical application of reuse within the architectural design process.

Through interviews and literature studies, this thesis collects knowledge from professionals within the architectural field of today's construction industry, describing what aspects affect the opportunities to reuse, what challenges exist and what they see as likely measures to increase reuse. By implementing a real design and construction project, experience is gained on how reuse works in practice beyond conceptual ideas.

Everything is project specific when it comes to reuse, which stresses the importance of architects starting their own learning process by engaging in pilot projects and taking a more active part in construction.

Reuse projects require more time due to the lack of an efficient logistical supply system for reuse products. Also, the many uncertainties when working with reuse demands an iterative design process, which creates a challenging chain of consequences. Thus, architects must become increasingly flexible in their design. Architects can contribute to making reuse feasible by increasing their knowledge on material content, quality and environmental impact to be able to properly evaluate reuse choices made. Increased reflection on material qualities and properties are required during the design process.

By designing with reused materials, architects can contribute to an increasing demand which will create incentives for a logistical supply system facilitating reuse. However, in the beginning, for architects to be able to realize reuse projects, their own systems must be created by establishing collaboration with like-minded suppliers and businesses.

Keywords:

Reuse, Circular design, Reuse design, Architectural design process, Sustainable construction industry